

Spring 2022 Course Descriptions

Please review the course descriptions below. You should select your <u>top five</u> classes. The course selection survey will open <u>Wednesday, January 19 at 11:50 AM</u> and closes <u>Monday, January 24 at 8:00</u> <u>AM</u>. Course assignments will be sent via UC Davis email on Wednesday, January 26.

- These courses are restricted to honors students and can only be accessed using a **Course Registration Number (CRN)** distributed by UHP. You cannot search for them in Schedule Builder.
- Each honors student must complete three UHP courses during the 2021-2022 academic year (one per quarter). Taking a second course during Spring 2022 does not waive another quarter's UHP course requirement unless approved by UHP.
- All of the Honors courses are capped at 25 students each, except for DES 128B, ECH 1, MAT 17C, MAT 21D, IST 8A, SOC 2, and SOC 132 which are capped at 14, 24, 30, 30, 20, 20, and 15 respectively.
- ECH 1 is part of a large general-population lecture; however, the lab section is taught by Professors Kuhl and Ristenpart instead of a TA and includes only UHP students.
- Honors courses must be taken for a letter grade and earn a minimum grade of C-; courses changed to P/NP grading will not count toward UHP requirements.
- All prerequisites listed in red text will not be waived for honors students. All courses with WE General Education credits require satisfaction of ELWR.

Note: Department course offering details--classrooms, days, and times—are subject to change. Schedule Builder provides the most accurate information to date.

COURSE OFFERINGS									
TITLE African-American Cultur Society	re &	TERM 202203		SUBJ AAS	CRSE 10		SEC 0U1	CREDITS 4.000	
INSTRUCTOR(S) Harrison, Milmon	TYPE Lecture		DAYS R	TIME 2:10 PM – 5:00	PM	BUILD TLC		ROOM 1212	

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR). Critical examination of the historical, political, social, and economic factors that have affected the development and status of African-American people in contemporary society. GE credit: ACGH, DD, SS, WE.

TITLE		TERM	SUBJ	CRSE	SEC	CREDITS
BioDesign Challenge –	Part 2	202203	DES	128B	001	4.000
INSTRUCTOR(S)	ΤΥΡΕ	DAYS	TIME		BUILD	ROOM
Cogdell, Christina	Lecture	F	1:10 PM -	- 4:00 PM	ACADSURGE	2240

Discussion/Laboratory – 3 hour(s). Prerequisite: Winter 2022 Honors DES 128A with C or better. Teambased, experimentally grounded prototype design in a mini-entrepreneurial start-up context. GE credit: SE.

Continuation of Winter 2022 University Honors Program BioDesign Challenge Course. In this unique pair of courses over two quarters, students will work closely with Design and Biology or Bioengineering faculty in a hands-on, cross-disciplinary course experience to produce and showcase innovative new products that are functional, elegant, and sustainable.

In the first quarter, teams of students learn basic principles of BioDesign and develop their project ideas for a proposal, including an introduction to the lab work they'll need to get going in the next quarter. Then students put their approved plans in motion in the second quarter to create the novel designs coupled with promotional materials such as videos, websites and product pitches. The series culminates in a local competition judged by UC Davis and visiting faculty as well community experts such as designers and venture capitalists.

In 2018, UC Davis BioDesign students produced completely novel biodegradable diapers, biosensors for toxic chemicals, sustainable fashion from biodegradable "leather", and a variety of other clever designs merging art and science. The UCD teams were specifically challenged to use agricultural waste products, even tricking Kombucha SCOBY (!), to produce new biodegradable polymers that can be incorporated into a whole host of applications. The 2018 winning UC Davis team –the Sorbit diaper team (https://www.youtube.com/watch?v=CCKUzZB2cDI) -traveled to New York City in June representing UC Davis at the international BioDesign Challenge (http://biodesignchallenge.org/). They came in second overall and first place in the science category, a remarkable performance for a first time participating University!

TITLE Design of Coffee	TERM 202203	6	SUBJ ECH	CRSE 001		SEC AU1	CREDITS 3.000
INSTRUCTOR(S)	ТҮРЕ	DAYS	TIME		BUILD		ROOM
Kuhl, Tonya	Lecture	М	3:10 PM - 4:00	PM	OLSON		006
Ristenpart, William	Lab/Dis	Т	10:00 AM – 11:	50 AM	EVERSN	I	126

Description:

Lectures – 1 hour(s); Laboratory – 2 hour(s); Project (Term Project) – 1 hour(s). Non-mathematical introduction to how chemical engineers think, illustrated by elucidation of the process of roasting and brewing coffee. Qualitative overview of the basic principles of engineering analysis and design. Corresponding experiments testing design choices on the sensory qualities of coffee. Not open for credit to Chemical Engineering and Biochemical Engineering majors or students who have completed Chemical and Materials Science 5. GE credit: SE, SL, VL.

Note: This course is a large 1-hour general population lecture, but Professors Tonya Kuhl and William Ristenpart will be teaching the small 24-person 2-hour lab.

TITLE Computer Organization Machine-Dependent Programming	&	TERM 202203		SUBJ ECS	CRSE 50		SEC 0U1	CREDITS 4.000
INSTRUCTOR(S)	ТҮРЕ		DAYS	TIME		BUILD		ROOM
Nitta, Christopher	Lecture		TR	9:00 AM - 10:2	0 AM	GROVE		1283
	Discuss	ion	R	12:10 PM - 1:00	0 PM	OLSON		101

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Prerequisite(s): ECS 040 C- or better or ECS 034 C- or better or ECS 036B C- or better. Pass One open to Computer Science, Computer Science & Engineering, Computer Engineering, and Cognitive Science Majors only. Comparative study of different hardware architectures via programming in the assembly languages of various machines. Role of system software in producing an abstract machine. Introduction to I/O devices and programming. Only 1 unit of credit allowed for students who have taken EEC 070. GE credit: SE.

TITLE Principles of Food Scier	ce	TERM 202203		SUBJ FST	CRSE 1		SEC 0U1	CREDITS 3.000	
INSTRUCTOR(S) Lungu, Bwalya	TYPE Lecture		DAYS TR	TIME 12:10 PM –	- 1:30 PM	build Veimyf	{	ROOM 116	
	Discuss	ion	R	2:10 PM - 3	3:00 PM				

Description:

Lecture – 2 hour(s); Discussion – 1 hour(s). Not open for credit to students who have completed any FST course, except FST 010. Food science fundamentals. Fresh and processed food technologies; world food problems; food composition; food microbiological and toxicological safety; food laws; evaluation of acceptability and nutritional value. GE credit: SE, VL.

Introduces students to the basic fundamentals of food science and underlying technology associated with providing a safe, nutritious, and abundant supply of fresh and processed foods to humans. Students are introduced to the nature and scope of the world food problem as well as the solutions that have been proposed. This is followed by an introduction to looking at foods and food systems in scientific terms and how understanding basic scientific principles explains how and why we process, prepare, and store foods for human consumption. Students will be introduced to how the food industry and regulatory agencies deal with potential health hazards associated with toxic chemicals and disease-causing organisms that can be present in foods, and how food preservation and processing can extend food availability from times of plenty to times of scarcity and from regions of surplus to regions of deficit.

TITLE	TERM	SUBJ	CRSE	SEC	CREDITS
Melodrama from Mozart to	202203	GER	41	0U1	4.000

Lion King

INSTRUCTOR(S)	ТҮРЕ	DAYS	TIME	BUILD	ROOM
Zhang, Chunjie	Lecture	TR	3:10 PM – 4:30 PM	WELLMN	103

Description:

Lecture/Discussion – 3 hour(s); Extensive Writing/Discussion. Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR). Melodrama as a major dramatic genre from Mozart's music dramas in the 18th century to films in the 21st century. Tragic psychological effects of death, war destruction, and the demonic, melodramatic expressions of political oppression, economic exploitation, and revolution, issues of race, gender, and class, capitalism and modernity, transnational and trans-generic adaptations. GE credit: AH, WC, WE.

This course explores the genre of melodrama in opera, literature, and film from the eighteenth century to the present. Melodrama emerged out of the duality between tragedy and comedy as a hybrid genre in a time of declining monarchies and rising liberal democracy. It represents the lives of common people and celebrates their sorrow and love in verse and song. Expressing heightened emotionality and moral contrast, melodrama offers an aesthetic opportunity for students to approach emotion, understand its historical transformation and cultural complexity, develop empathy for others, and support diversity. This course will discuss canonical works of art such as Mozart's Don Giovanni, Hugo's Les Misérables, Puccini's Madame Butterfly, Shakespeare's Hamlet and its Disney adaptation The Lion King, Hollywood cinematic melodramas and their influence on German New Cinema. Students also read philosophical reflections on melodramas by Schiller, Nietzsche, Kierkegaard, Peter Brooks, and Stanley Cavell to deepen discussion. In addition to textual analysis, we will invite composers and opera singers to class to discuss their perspectives on operas, musicals, and film music and hear a live concert featuring some of musical works discussed in class.

TITLE Race: A Global History	TERM 202203	3	SUBJ HIS	CRSE 110		SEC 0U1	CREDITS 4.000
INSTRUCTOR(S) Jean-Baptiste, Rachel	TYPE Lecture	days Tr	TIME 9:00 AM – 10:2	0 AM	BUILD BAINER		ROOM 1128

Description:

Lecture – 3 hour(s); Term Paper. Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR). Topics will emphasize the interaction of diverse regions of the world as well as common patterns of historical change. May be repeated for credit when instructor and/or topic differs. GE credit: AH, SS, WC, WE.

This course analyzes how changing ideas and practices about race have shaped how varied civilizations in the modern world conceived of culture, politics, economics/labor and science/medicine. Reading Elizabeth Wilkerson's Caste: The Origins of Our Discontents as a launching pad, the course embarks on a global and multidisciplinary history of racial thought. Course content will focus on three geographical case studies in the 19th and 20th centuries: India; the United States; and two countries in West Africa: Ghana and Senegal. Following the travels, travails, and triumphs of a diverse group of historical actors, the course will explore the themes of: slavery/unfree labor, public health and medical research, popular culture, sexuality, marriage and family life, as well as changing concepts such as law and order and racial identity. Students will hone skills in critical analysis of visual, video, and text-based sources as well as effective writing.

TITLE Adventures in Data Scie Quarter 2	nce,	TERM 202203		SUBJ IST	CRSE 8X*		SEC 0U1	CREDITS 4.000
INSTRUCTOR(S)	TYPE	1	DAYS	TIME		BUILD		ROOM
Reynolds, Pamela	Discussi	ion V	i R Weekly	group project m	eetings	SHIELDS)	360

*IST 8X is a cross-listed course consisting of IST 8A, IST 8B, and IST 8C. Students will register for course 8A, 8B, or 8C depending on their GE preference. Course 8A: SE, SL. Course 8B: AH. Course 8C: SS.

Prerequisite(s): Winter 2022 IST 8X – Adventures in Data Science, Quarter 1 with B or better. This is the second course in a challenging two-quarter series. The first course of the series, offered in Winter 2022, is a classroom-based course in which students will acquire the core skills and knowledge necessary to conduct data-driven research using the R programming language. No previous experience with computer science, data science, or statistics is required. It is an expectation that students who successfully complete the first quarter of the series with a final grade of B or better will move on to the second course of the series offered in Spring 2022. The second course is a practicum-based learning opportunity in which students will be embedded into one of several interdisciplinary research teams to solve active research problems with faculty and researchers from across UC Davis. During the second quarter students will work closely with the faculty Principal Investigators ("clients"), Graduate Student mentors, and staff research data scientists.

Combined, the **two-quarter honors/elective** series introduces students to the basics of computer programming and data analysis using the R programming language and provides hands-on exposure to the core skills needed to work in interdisciplinary, team-science settings. This program is designed to give students pursing majors that are not within the data sciences the knowledge and skills to succeed in today's interdisciplinary, data-driven workforce.

TITLE Hypothesis Testing with Bird Song	TERM 202203	SUBJ IST	CRSE 8A	SEC 0U2	CREDITS 4.000
INSTRUCTOR(S) TYPE Coombs-Hahn, Thomas Lecture	DAYS T	TIME 2:10 PM – 5:00 F	BUILD		ROOM

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Group study of a special topic in natural sciences and mathematics. Varies with topic offered. May be repeated for credit. GE credit: SE, SL.

Many major discoveries in the fields of animal behavior, behavioral ecology, evolution, and neuroscience have been based on studies of bird vocalizations. With the recent advent of publicly available repositories of high-quality audio recordings of wild bird vocalizations, it is now possible to evaluate some long-standing assumptions and test hypotheses about bird vocal behavior using existing samples. Key questions in this research area concern the mechanisms of vocal development (whether vocalizations are learned or innate), the evolution of developmental mechanisms (when the ability to modify vocal behavior through learning first appeared, and how many times it has evolved), and whether there are widespread "limits to vocal performance" that constrain vocalizations to be honest indicators of individual quality. In this course we will evaluate these and other questions using publicly-available audio recordings from <u>Xeno-Canto</u> and free <u>Raven sound analysis software</u>.

The course will begin with a few lectures introducing the broad array of biological questions that have been (or could yet be) examined in the context of bird vocalizations. The purpose of this will be to give students ideas for problems they can explore further; students will not be handed pre-packaged projects and study plans. The next part of the course will involve forming teams of 2-4 students who share interests in particular topics. Those teams will then each identify a primary research question and a set of alternative hypotheses that they plan to investigate using audio recordings. They will then outline sets of testable predictions to evaluate their hypotheses. Finally, the students will formulate and carry out a plan to test their predictions by collecting and analyzing data from recordings they download from Xeno-Canto. All of this can easily be done in the remote learning environment. A fundamental goal of the course will be to give students the opportunity to explore, and participate deeply in, the process of formulating scientific questions, hypotheses, and predictions, and with collecting and analyzing acoustic data. In addition to receiving feedback from their peers and instructor, each team will be assigned a primary graduate student mentor to guide them in developing their questions and research projects.

RSE SEC 7C 0U1	L 4.000
BUILD	ROOM
M HART	1120
'М	HART
Л	OLSON

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Prerequisite(s): MAT 17B C- or better. Matrix algebra, functions of several variables, partial derivatives, systems of differential equations, and applications to biology and medicine. Not open for credit to students who have completed MAT 021C; only 2 units of credit to students who have completed MAT 016C. GE credit: SE, SL.

TITLE Vector Analysis	TERM 202203	5	SUBJ MAT	CRSE 21D		SEC 0U1	CREDITS 4.000	
INSTRUCTOR(S)	TYPE Lecture Discussion	DAYS MWF R	TIME 10:00 AM – 10:1 7:10 PM – 8:00	50 AM PM	BUILD OLSON OLSON		ROOM 227 125	

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Prerequisite(s): (MAT 021C C- or better or MAT 021CH C- or better) or MAT 017C B or better. Continuation of MAT 021C. Definite integrals over plane and solid regions in various coordinate systems. Line and surface integrals. Green's theorem, Stoke's theorem, divergence theorem. GE credit: QL, SE.

TITLE Introduction to Cognitiv Science	re	TERM 202203	SUBJ PHI	CRSE 10	SEC 0U1	CREDITS 4.000
INSTRUCTOR(S)	TYPE	DAYS MWF	TIME 12:10 PM – 1:00	E DPM (BUILD	ROOM 1283

Lecture/Discussion – 4 hour(s). Introduction to the interdisciplinary cognitive scientific approach to the study of mind, drawing concepts and methods from psychology, philosophy, linguistics, artificial intelligence, and other disciplines. (Same course as CGS 001). GE credit: SE, SL.

This course introduces the interdisciplinary pursuit of cognitive science. See how philosophers, neuroscientists, computer scientists, linguists and others come together in the common goal of developing a science of cognition.

TITLE Classical Physics	cs 202203		SUBJ CRSE PHY 9A		SEC 0U1	CREDITS 5.000
INSTRUCTOR(S)	ΤΥΡΕ	DAYS	TIME		BUILD	ROOM
Chiang, Shirley	Lecture	MWF	11:00 AM – 1	11:50 AM	RESSLER	55
	Laboratory	Т	8:00 AM – 10:20 AM		RESSLER	164
	Discussion	W	6:10 PM – 7:	00 PM		

Description:

Lecture – 3 hour(s); Laboratory – 2.5 hour(s); Discussion – 1 hour(s). Prerequisite(s): MAT 021B or MAT 021M; or Consent of Instructor. Introduction to general principles and analytical methods used in physics for physical science and engineering majors. Classical mechanics. Only 2 units of credit for students who have completed PHY 001A or PHY 007B; not open for credit to students who have completed PHY 009HA. GE credit: SE.

Kinematics, forces and statics problems, Newton's Laws of Motion, work and energy, linear momentum, collisions, angular momentum, torque, gravitation, Kepler's Laws, small oscillations.

TITLE Research Methods in Psychology	ter 202	R M 2203	SUBJ PSC	CRSE 41	SEC 0U1	CREDITS 4.000
INSTRUCTOR(S) Geng, Joy	TYPE Lecture	DAYS TR	TIME 10:30 AM -	- 11:50 AM	BUILD	ROOM

Description:

Lecture – 3 hour(s); Extensive Writing. Introduction to experimental design, interviews, questionnaires, field and observational methods, reliability, and statistical inference. GE credit: QL.

This course is an overview of the fundamentals of research methods behind the broad field of psychological science. Emphasis on how research in psychology is planned, carried out, interpreted, and critiqued. Topics include use of human participants in research, reliability and validity, and observational and experimental methods. Examples drawn from various specialty areas in psychology.

TITLE	TERI	М	SUBJ	CRSE	SEC	CREDITS
Self & Society	2022	203	SOC	002	001	4.000
INSTRUCTOR(S)	ΤΥΡΕ	DAYS	TIME	E	BUILD	ROOM
Faris, Robert	Lecture	MW	2:10 PM –	4:00 PM 0	DLSON	207

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Exploration of how self and identity are formed and transformed by socialization and social interaction in relation to roles, groups, institutions, power, and social change. Consideration of how people make decisions, fall in love, and come to blows. GE credit: ACGH, DD, SS.

This course introduces the key concepts and theories of social psychology, beginning with an overview of basic mental processes, followed by an exploration of the self and identity, an examination of important types of primary relationships, and concluding with a survey of group and cultural influences. In other words, we will figure out how we can be manipulated, how we fall in love, and why we can't all just get along.

TITLE	TERM		SUBJ	CRSE		SEC	CREDITS
Sociology of Gender	202203	3	SOC	132		0U1	4.000
INSTRUCTOR(S) Grindstaff, Laura	TYPE Lecture	DAYS MW	TIME 4:10 PM – 6:00	PM	BUILD WELLM	N	ROOM 005

Description:

Lecture – 3 hour(s); Discussion – 1 hour(s). Analysis of biological, psychological, cultural, and structural conditions underlying the status and roles of men and women in contemporary society, drawing on a historical and comparative perspective. GE credit: ACGH, DD, SS.

What is gender and where does it come from? What forces shape gender? What happens when we don't live up to gender expectations? This course employs a sociological perspective to examine the social construction of gender difference and gender inequality in contemporary American society. It is designed to give students a better understanding of the pervasiveness of gender in their everyday lives, and to question the assumptions and requirements of gender. Because gender does not exist in a vacuum, it is discussed in relation to other social locations such as race/ethnicity, class, and sexuality. Topics covered include work, parenting, education, and popular culture. We explore these topics through discussion of assigned readings and videos and well as by conducting original research.

CRSE

Elementary Statistics	20220)3	STA 13		0U1	4.000
INSTRUCTOR(S)	ТҮРЕ	DAYS	TIME	BUILD		ROOM
Whitener, JoAnna	Lecture	MW	12:10 PM – 2:00 PN	1		

Lecture – 3 hour(s); Discussion – 1 hour(s). Prerequisite(s): Two years of high school algebra or Mathematics D. Descriptive statistics; basic probability concepts; binomial, normal, Student's t, and chisquare distributions. Hypothesis testing and confidence intervals for one and two means and proportions. Regression. Not open for credit for students who have completed STA 013V or higher. GE credit: QL, SE.

A non-calculus approach to descriptive and inferential statistics. Topics include data analysis; probability and counting; probability distributions including the binomial, normal, Student's t, and chi-square; hypothesis testing and confidence intervals for one and two means and proportions; regression and correlation.

TITLE Style in the Essay	TERM 202203		SUBJ UWP	CRSE 48		SEC 0U1	CREDITS 4.000
INSTRUCTOR(S) Miller, Greg	TYPE Lecture	DAYS TR	TIME 1:10 PM – 3:00	PM	BUILD		ROOM

Description:

Lecture/Discussion – 4 hour(s). Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR). English-language proficiency. Principles of style, language, and structure in the essay. Analysis and development of voice and genre, including sentence revision for force and clarity, and development of effective paragraphs and essays. Not open for credit to students who have taken UWP 018. GE credit: AH, WE.

A course in creative non-fiction that emphasizes principles of style, language, and structure in the essay. You will read a wide range of authors and experiment with multiple styles, gaining a greater understanding of strategies to appeal to diverse audiences in ways that will help you develop a more effective writing voice. This course will help you write more effectively throughout college and beyond. Students must be English-proficient in addition to having satisfied the Entry Level Writing Requirement.

TITLE History of Scientific Wri	ting	TERM 202203	SUBJ UWP	CRSE 121	SEC 0U1	CREDITS 4.000	
INSTRUCTOR(S)	ТҮРЕ	DAYS	TIME		BUILD	ROOM	
Herring, Scott	Lecture	MW	12:10 PM	– 1:30 PM	SCC	2103	

Description:

Lecture – 3 hour(s); Extensive Writing. Prerequisite(s): Completion of Entry Level Writing Requirement (ELWR). History of scientific writing from the 17th century to the present; origins and evolution of scientific genres; role of scientific writing in producing scientific knowledge; discursive differences

between disciplines; emergence of English as a global language of science. GE credit: AH, SE, SL, WE.

How does scientific writing work? What does it communicate, and why do scientists and other science writers choose the precise strategies they do? We will answer these questions, and plenty of others. Students will focus on two tasks: you will learn to understand scientific writing and will get better at producing your own. You will write a series of term papers aimed at achieving both goals.

Writing about big nature reserves, especially Yellowstone and Yosemite, will serve us as case studies, although we will not restrict ourselves more than we need to; writing about the natural environment is our major focus. We will also look closely at medical writing. While students are expected to know basic essay structure, as well as sentence mechanics, before coming into the class, we will also spend time on style and usage.

Texts: All reading will be in PDF documents supplied by the instructor, except these two books:

- 1. McPhee, John. Assembling California. Farrar, Straus and Giroux, 1993.
- 2. Quammen, David. Spillover: animals infections and the next human pandemic. Norton, 2012.

Writing Assignments: You will complete four written assignments during the quarter; in addition, we will have a number of quizzes and in-class assignments. Quizzes, which may be given at any time, may not be made up, and you will be responsible for any instructions given in your absence. Verbal displays of your critical thinking skills also constitute an essential aspect of your presence in class. An important note: all the papers must be handed in to receive a passing grade for the course. Here are the assignments (the page counts are in 12-point Times New Roman, with one-inch margins):

Paper 1: Analysis 1, 3 pages: 15% Paper 2: Analysis 2, 3 pages: 15% Paper 3: The History of a Familiar Science, 5 pages: 25% Paper 4/Final Essay Exam: The History of an Unfamiliar Science, 5 pages: 25% Quizzes, class participation: 20%

Final Exam: The fourth paper will function as a take-home final, due on the day our final exam would have taken place.

TITLE		TERM	SUBJ	CRSE	SEC		
Introduction to wine	emaking	202203	VEN	3	001	3.000	
INSTRUCTOR(S)	ΤΥΡΕ	DAYS	TIME		BUILD	ROOM	
Ebeler, Sue	Lectur	e TR	9:00 AM –	- 10:20 AM	RMIBWF	00000	

Description:

Lecture – 3 hour(s). Overview of the history of wine, viticulture, fermentation, winery operations, the physiology of wine consumption, wines produced in California and other major wine-producing regions and the sensory evaluation of wine. GE credit: SE, SS.